



EARTH DAY, TOO

NIH Observes Take Your Child To Work Day

BY ERIC BOCK

Where can you tour a pathology lab, learn how to draw blood, visit live birds and reptiles and observe smoking's effects on the respiratory system? Oh, and drag adults toward the candy shop and knock on office doors then run, too?

Only at NIH's 24th Take Your Child to Work Day/Earth Day, of course!

This year, more than 4,100 students participated in over 190 activities on Apr. 26. They learned about vital services their parents and guardians provide at NIH, explored career opportunities in medical



NIH principal deputy director Dr. Lawrence Tabak hosts Picture Puzzle Trivia, a Bldg. 1 event that explored health science facts.

research and had fun while doing it. Future engineers, nurses, surgeons and lawyers donned their medical scrubs, were warned not to touch anything unless they wore gloves and told, "If you don't feel well, let me know." The students listened intently as they learned there's more to pathology than what's portrayed on forensics crime drama television shows.

In another part of the CC, technologists from the departments of laboratory medicine and transfusion medicine gave interactive presentations about chemistry, hematology, immunology, microbiology and phlebotomy

SEE CHILDREN, PAGE 6

research and had fun while doing it.

Around 9:30 a.m., a small group of students, their parents and guardians gathered outside the NCI Autopsy Suite

Patients with Rare Genetic Mutation Lead to Insights on Touch, Pain

BY ANGELA ARENSDORF

The medical staff of two clinics, co-sponsored by NIH for children with rare or

undiagnosed neuromuscular disorders, had a mystery on their hands.

Two patients had shown a similar, rare set of symptoms including skeletal abnormalities such as progressive scoliosis and

contracted joints in their hands and feet; problems detecting where their body is

Heen Discusses Art of Receiving Feedback Well

BY DANA TALESNIK

A little gratitude would be nice. Instead, the draft you meticulously labored over comes back fully revised and your face turns redder than the ink on the page. It can be tough receiving negative feedback, but is some of it perhaps valuable?

"Every single day, we swim in an ocean of feedback," said Sheila Heen during a recent interactive and witty Deputy Director for Management seminar in Masur Auditorium.



Sheila Heen



Dr. Alexander Chesler

SEE HEEN, PAGE 4

SEE CHESLER, PAGE 8



5K prep marks Minority Health Month, p. 12.

ALSO THIS ISSUE

NAS Elects Two from NIH	2
Genentech's Mellman Optimistic About Cancer Immunotherapy	3
Lessons on Symptom Science	5
Digest	9
Milestones	10
Second 5K, Satellite Walk Celebrate National Minority Health Month	12

NAS Elects Two from NIH

Two NIH scientists are among 84 new members and 21 foreign associates elected to the National Academy of Sciences in recognition of their distinguished and continuing achievements in original research.



Dr. Michael Gottesman

Dr. Michael Gottesman is NIH deputy director for intramural research and Dr. Clare Waterman is distinguished investigator and director, Laboratory of Cell and Tissue Morphodynamics, Cell Biology and Physiology Center, National Heart, Lung, and Blood Institute.

Those elected

May 1 bring the total number of active members to 2,382 and the total number of foreign associates to 484.

The National Academy of Sciences is a private, nonprofit institution that was established under a congressional charter signed by President Abraham Lincoln in 1863. It recognizes achievement in science by election to membership, and—with the National Academy of Engineering and the National Academy of Medicine—provides science, engineering and health policy advice to the federal government and other organizations.

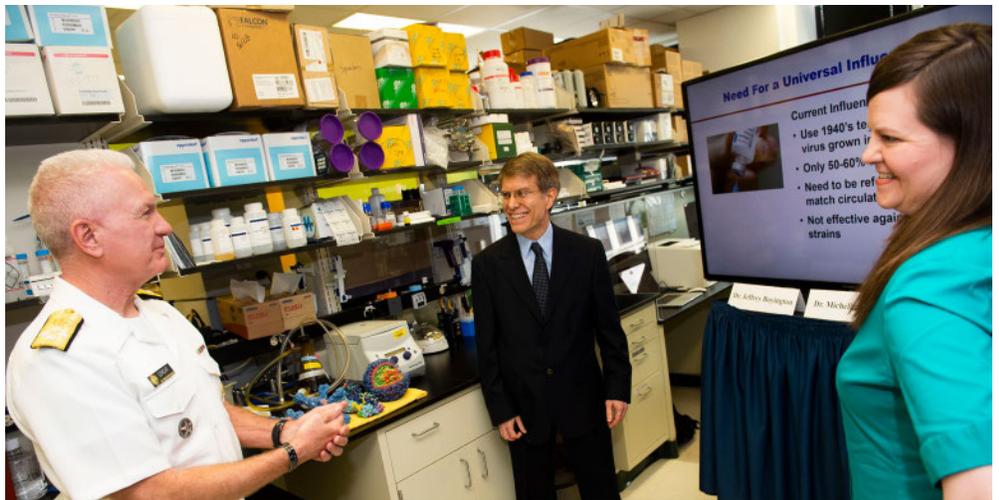


Dr. Clare Waterman

Take the 2018 FEVS Survey

The 2018 Federal Employee Viewpoint Survey (FEVS) will remain open until Monday, June 18. This is your opportunity to provide input on a variety of topics within your organization, including work experience, leadership, diversity and inclusion. NIH uses the results to make changes throughout the organization.

Eligible NIH employees (full- and part-time permanent, non-seasonal employees, on board on or before Oct. 28, 2017) should receive an email invitation from the Office of Personnel Management containing a link to participate in the survey. The survey takes 20-25 minutes to complete and your responses will be confidential.



Assistant Secretary for Health Visits NIH

Adm. Brett Giroir, who became HHS assistant secretary for health on Feb. 15, visited NIH on May 3, touring the Vaccine Research Center and meeting with NIH senior leadership to discuss opioids and the Common Rule. He also met with institute and program directors (All of Us, the Environmental Influences on Child Health Outcomes Program and the NHLBI Sickle Cell Program) before receiving a laboratory presentation on a universal flu vaccine. Above, Giroir gets an update on the need for a flu vaccine from Dr. Jeffrey Boyington and Dr. Michelle Crank. Below, at left, NIAID director Dr. Anthony Fauci welcomes Giroir to NIH, while at right, Boyington shows him details of a flu virus model.

PHOTOS: LISA HELFERT



In 2017, the NIH response rate was 57.1 percent. This year, NIH director Dr. Francis Collins set a goal of 60 percent employee participation. Take a few minutes to share your perspective so that leaders across NIH can continue to make NIH a great place to work.

For questions about FEVS, visit <https://hr.nih.gov/working-nih/fevs> or contact the Office of Human Resources at NIHFEVS@nih.gov.

'Festschrift' for NEI's Ferris, June 5

NIH'ers are invited to join NEI in celebrating the career of Dr. Frederick (Rick) Ferris III, former NEI clinical director and director of the NEI Division of Epidemiology and Clinical Applications. He retired in November 2017



after 44 years at NIH. The event Tuesday, June 5 from 8:30 a.m. to 3:30 p.m. in Kirschstein Auditorium, Bldg. 45, will feature presentations from Ferris' collaborators who will highlight lessons learned from clinical trials.

Ferris was involved in dozens of clinical trials, including NEI's first—the Diabetic Retinopathy Study. This and other trials served as the basis for treatment guidelines that cut the incidence of severe vision loss from diabetic retinopathy by 90 percent.

Ferris was also active in clinical trials for age-related macular degeneration. Taking the reins as NEI clinical director in 2000, Ferris ushered the eye clinic into the digital age, overseeing transition to an electronic medical records system to strategically collect data.

For more information and to register, visit <https://www.nei.nih.gov/festschrift-frederick-i-ferris-iii-md> or email Maria Zacharias, maria.zacharias@nih.gov.

Mellman Optimistic About Cancer Immunotherapy

Dr. Ira Mellman, vice president for cancer immunology at Genentech, Inc., had just come back from the American Association for Cancer Research annual meeting in Chicago when he gave a Wednesday Afternoon Lecture Apr. 18 in Masur Auditorium.

“There is a great deal of excitement due to recent work in cancer immunology and immunotherapy,” he reported. “The field had been in the depths of despair for years. Now everybody wants to get in on the act, which is terrific, because it’s a very good act to be in.”

Mellman is principally interested in “what we can do for patients by modulating



Dr. Ira Mellman of Genentech is optimistic about cancer immunotherapy and immunology.

PHOTOS: MARLEEN VAN DEN NESTE

understood, targets the effector side of the cycle and has proven effective across a broad range of tumors, but in only 10-30 percent of patients. It is approved for both bladder and non-small-cell lung cancer.

“There is a great deal of excitement due to recent work in cancer immunology and immunotherapy.”

-DR. IRA MELLMAN

the immune system, and what we can learn about cancer immunity by studying patient response.”

He and his colleagues have identified what they call the cancer immunity cycle, which has two phases: activation and effector.

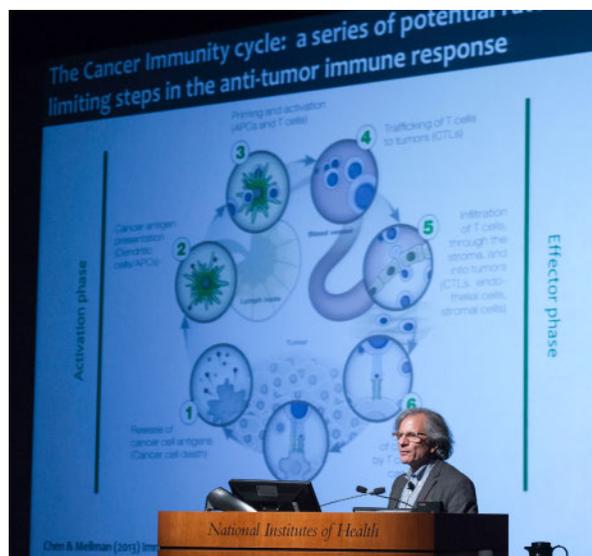
His company has created an anti-PD-L1 antibody that, while not completely

Mellman said the antibody, atezolizumab, confers a good survival benefit for all second line non-small-cell lung cancer patients, but the benefit is particularly large in those individuals whose tumors express the PD-L1 protein itself.

“The PD-L1 diagnostic is a valuable and interesting tool, one that has taught us a lot,” he said. “But it is not a perfect biomarker, as some PD-L1-negative patients derive benefit from therapy while some PD-L1-positive patients fail to benefit.”

He and his collaborators continue to search for drug targets of immunotherapy and are now trying combinations of two inhibitors in a phase 3 trial that will read out this spring.

In his talk, Mellman also touted immunotherapy results emerging from NCI’s Surgery Branch headed by Dr. Steve Rosenberg, which he called “spectacular.” Mellman is now collaborating with the German company BioNTech to make personalized cancer vaccines.



“Each person will need his or her own vaccine,” he said. Physicians would biopsy a patient’s tumor, identify signature mutations and then craft RNA-liposome complexes that can be delivered intravenously—all in 4 weeks.

“Trials in combination with atezolizumab are under way and we are excited because initial results with vaccine alone (recently published in *Nature*) appear to have arrested disease recurrence in melanoma patients.”

Mellman added that “in principle, all cancer patients could get their own cancer vaccine...We are just at the beginning stages of the field of determining what immunological factors are most important.”

Mellman’s lecture on “Mechanistic Basis of Cancer Immunotherapy” is available (to HHS employees only) at <https://videocast.nih.gov/summary.asp?Live=27208&bhcp=1>.

—Rich McManus



ON THE COVER: Serotonin receptor bound to ergotamine

IMAGE: NIH 3D PRINT EXCHANGE

The NIH Record

Since 1949, the *NIH Record* has been published biweekly by the Editorial Operations Branch, Office of Communications and Public Liaison, National Institutes of Health, Department of Health and Human Services. For editorial policies, email editor or phone (301) 496-2125.

Editor: Rich McManus
Rich.McManus@nih.gov

Associate Editor: Carla Garnett
Carla.Garnett@nih.gov

Staff Writers:
Eric Bock • Eric.Bock@nih.gov
Dana Talesnik • Dana.Talesnik@nih.gov

Subscribe via email: listserv@list.nih.gov Follow: <http://nihrecord.nih.gov/>



The *NIH Record*
is recyclable as
mixed paper.



National Institutes of Health
Turning Discovery Into Health



Heen

CONTINUED FROM PAGE 1

“It’s our relationship with the world—how we’re impacting other people—and the world’s relationship with us.”

There’s often no shortage of feedback from bosses, colleagues, teachers, family and friends. It’s usually direct. Sometimes it’s unspoken and plenty of it is unsolicited. Other times, we want more specific feedback and aren’t sure how to request it.

“Receiving feedback is actually a distinct and critical leadership skill,” said Heen, bestselling author, Harvard Law School lecturer and founder and CEO of Triad Consulting Group. “If you get better at it, you can actually learn even from the poor givers in your life.”

Getting negative feedback can be difficult to digest because we want to learn, yet we also want to feel accepted and respected the way we are now. We need to constantly manage these two conflicting needs. One way to do so, said Heen, is to convey to others the kinds of feedback we need at any given time.

All three kinds of feedback—appreciation, coaching and evaluation—help us learn and grow over time. “Appreciation is a big piece of what keeps people motivated and engaged,” said Heen. When we feel unappreciated, we become less receptive to coaching—the suggestions, corrections and mentoring that help us improve our skills.

Evaluation is the most volatile type of feedback, said Heen. “Our reaction to

★ ★ ★
“Receiving feedback is actually a distinct and critical leadership skill. If you get better at it, you can actually learn even from the poor givers in your life.”

—SHEILA HEEN

★ ★ ★

evaluation can be emotionally so loud, it can drown out my ability or willingness to hear the coaching that’s often saved up all year and dumped into my evaluation conversation.”

That’s why it’s important throughout the year to discuss with your colleagues and supervisor the kinds of feedback you need and what they might want from you. “Create a culture inside your own team where you just check in periodically,” said Heen. “It’s okay to say: ‘I’m overwhelmed and could use more encouragement.’”

Need more coaching? Ask for it. As you become more senior, fewer people are willing to candidly offer their coaching. “If you’re not sure as a leader what you should be working on right now, do you know who knows?” said Heen. “Pretty much everybody else.”

It’s tempting to dismiss feedback that’s less than flattering. We’re immediately skeptical, trying to figure out what’s wrong with the advice so we can justify rejecting it.

“Typically, we decide a little too fast,” said Heen. “It could be 90 percent wrong and that

last 10 percent might be just what you need to think about.”

Instead of rejecting the critique based on your triggered reaction, said Heen, have better conversations around the feedback and try to find what parts might be valuable that you can try to implement.

During one exercise, Heen asked the audience to discuss what it means when someone says: “I don’t like the way those pants look on you.” Audience responses included “You’ve gained weight,” “You’re not dressed professionally,” “That style isn’t flattering on you” and simply, “Those pants are ugly.”

Feedback can be vague and have multiple meanings. “Often, we assume and react before we understand their message,” said Heen. “To unpack it and see what your giver means requires a bit more conversation.”

In that conversation, remember that feedback always has a past and a future, said Heen. We can look back to gauge where it might be coming from. Were there rules or expectations that prompted this feedback? Looking forward, what specifically is the



Feedback always has a past and a future, said Heen. We can look back to gauge its origins.

PHOTOS: CHIA-CHI CHARLIE CHANG

other person suggesting I do differently?

Those who are dispassionate about feedback might not realize someone is even giving them feedback, said Heen. Meanwhile, people who are more sensitive tend to blow it out of proportion, jumping to assume it means they never do anything right. In this state, you can't learn, warned Heen, though a bit of appreciation tossed in might help more-sensitive people be open to coaching.

"Part of managing our own feedback profile is learning how to understand and negotiate with ourselves, and not letting that critical, judgmental voice which is always

self-evaluating" get in the way of us hearing the feedback and becoming open to change, said Heen.

When we get upsetting or confusing feedback, our first instinct might be to complain to a friend to reaffirm our own preconceived ideas. But Heen warned, "If you want to see your blind spots, this is the moment where you can enlist people you trust—friends, colleagues—to ask a second question: 'I'm ready; what might be right about the [critical] feedback?'"

A strategy for requesting feedback is to ask the targeted question: "What's one

thing...?" that I could do, or not do, or change to make a difference. "You'll be amazed how fast they have an answer," said Heen. Once you've opened that door, they might come back the next day with a few more tips. "Do not say, 'I'm sorry, you already used your one thing.' Welcome the conversation."

We often postpone having these face-to-face conversations and asking for, or offering, coaching. "But there's no fantasy future where it suddenly, magically happens every day," she said. "Start integrating [better feedback conversations] into your everyday practice." **R**



Dr. Andrea Barsevick gives the first NINR Director's Lecture of 2018.

Barsevick Shares Symptom Science Lessons at NINR Director's Lecture

BY DIANA FINEGOLD

"I'm here today to tell you about my journey, my experience and the lessons that I've learned along the way."

So began the first NINR Director's Lecture of 2018, as Dr. Andrea Barsevick, one of the few experts studying symptom clusters in the United States and internationally, took the audience through her journey as a nurse scientist studying symptoms, symptom management and palliative care.

"In these postmodern times, health care professionals tend to think of cancer and other chronic diseases as objective reality, pathophysiological processes that we can manage, cure and occasionally palliate," she said. "However, there's another aspect to disease, the patient experience, the subjective reality that can only be understood by learning from the individual going through it."

Barsevick's journey toward symptom science research began when, "as a young nurse with a newly minted master's degree," she examined how a more comfortable inpatient bed bath might help reduce anxiety. By conducting this study, Barsevick learned how influential one symptom can be on others. For those patients not defined by pain, the intervention was effective

in reducing anxiety.

But for those patients still experiencing pain, the intervention did not help. She discovered early on that an intervention for one symptom could be affected by other symptoms. That lesson was something that stuck with her.

As Barsevick's career as a nurse scientist continued, she learned important lessons about research, one being that there is always something to be gained even if a study's outcomes do not produce the results one expected. For instance, hoping to focus on strengthening a previous intervention on fatigue, Barsevick conducted a clinical trial that did not deliver any positive results. However, quoting Mark Twain, she noted, "'Good judgment' comes from experience. Experience comes from 'bad judgment.'" Barsevick looked at what could have gone wrong with the study and gained knowledge as to what questions needed to be asked in future research.

She concluded her talk with several recommendations for researchers: study symptom clusters, invest in palliative care research and repositories for patient-reported outcomes. She also left the audience with some advice:

"As clinicians and scientists interested in symptom management, we must walk hand-in-hand to better understand and treat symptoms to improve our patients' quality of life and provide the chance for optimal survival."

Barsevick is a professor in the population science division of medical oncology at Thomas Jefferson University. She is known internationally for her research on symptom clustering during and after cancer treatment, particularly fatigue and its interactions with sleep disturbances, depressed mood and quality of life.

The NINR Director's Lecture Series is designed to bring the nation's top nurse scientists to NIH to share their work and interests with a trans-disciplinary audience. Barsevick's lecture is available on NINR's YouTube channel at <https://youtu.be/IAiNKJyJurM>.

SYMPTOM SCIENCE



NINR director Dr. Patricia Grady (l) presents plaque to Barsevick.



At left, the NIH Blood Bank's Colleen Bowman describes how ABO blood types are identified. At right, NIH chief officer for scientific workforce diversity Dr. Hannah Valantine (l), a cardiologist, explains how cardiovascular catheterization is performed. See more TYCTWD images online.

PHOTOS: LISA HELFERT, CHIA-CHI CHARLIE CHANG

Children

CONTINUED FROM PAGE 1

during the annual Fantastic Voyage event. Other than technologists, no adults were allowed in the room—"Sorry, parents!"—until it was time for photos.

NIAID's Christina McCormick brought her son, Kevin, for the 4th time. This year, Kevin, who wants to be a scientist when he grows up, enjoyed the police department's K-9 demonstration and extracting DNA from a strawberry.

Elsewhere on campus, students, their parents and accompanists took part in Earth Day activities inside Bldg. 45 and under tents on Bldg. 1's lawn. This year's theme was "End Plastic Pollution." Indoors, park rangers from the Scales and Tales program brought birds and reptiles, including hawks and snakes.

Outside on the lawn, kids and their



Two boys take a break from the day's activities to climb the Centennial Anchor at the intersection of Center and South Drives.

chaperones could grab a bite to eat from one of many food trucks and learn about electric vehicles, the area's waterways and wildfire prevention.

Activities continued into the afternoon. On the CC's 7th floor breezeway, Dr. Amisha Barochia and physician assistant Kerry Ryan, both from NHLBI's Pulmonary Branch, staffed a booth with information about the anatomy and function of lungs. The booth featured two sets of preserved pig lungs: one set healthy and another showing the damage that could occur from smoking.

Students could touch the lungs and inflate them with a foot pump. At first, Barochia said, most children are put off by the smell and reluctant to touch the lung. She hopes the demonstration will deter students from smoking.

NCI's Larry Pierce's son, Cole, touched the lung. Of the experience, he explained, "It's cool, but I'd rather stick with the rubber" lungs.

All in all, it was another successful TYCTWD/Earth Day, informing and entertaining both adults and students.



Residents of the Croasdaile Retirement Village keep music in their lives by rehearsing and performing around the Durham area in the Croasdaile Chorale.

NIEHS Celebrates Earth Day With Science, Music

A unique mix of science and music drew an enthusiastic crowd Apr. 22 for an NIEHS-sponsored Earth Day celebration at the downtown Durham Convention Center. The Music and Your Health community forum featured talks by scientists and leaders of local organizations devoted to the healing power of music, with performances by professional and amateur musicians alike.

In opening remarks, NIEHS and National Toxicology Program director Dr. Linda Birnbaum

spoke of the presence of music in our environment. "We're particularly interested in its health benefits, making sure that music is a part of our everyday lives," she said.

Co-organizer Dr. Brandy Beverly, an NTP health scientist, was inspired by the June 2017 joint production by NIH and the Kennedy Center. "I knew we needed to do something like that here," said Beverly, who is also a violinist with the Durham Medical Orchestra. "It's a great way to integrate music in our lives while exploring the science behind its benefits."

Beverly went to Dr. Laura Thomas, a neuroscientist in the NIEHS Division of Extramural Research and



John Oxendine used a drum and a double flute to demonstrate the role of music in Lumbee tribal life.



At left, kids look on in astonishment at the CC's Fantastic Voyage event. At right, a child uses a stethoscope to listen to her heart while her mother looks on.



At left, CC DLM's Char-Dell Edwards explains how bacteria is grown on agar petri dishes. At right, participants look on as NCI's Dr. Christopher Trindade points to a human brain.



Above, NCI postbaccalaureate Genesis Rivera-Marquez demonstrates the properties of dry ice. Below, Rafiq Perry, 7, and his mother, CIT's Rashanna Carter, take part in NIH's Earth Day festivities.

Training. Thomas was part of the team led by NIH director Dr. Francis Collins that planned both the Kennedy Center event and an earlier conference in January 2017. "What better way to talk about music in the environment than to tie it in with Earth Day?" Thomas asked.

The program opened with Lumbee tribal member John Oxendine explaining the importance of music in ritual and daily life and performing a haunting sample of traditional flute music. "When our elders sing the old songs they knew as a child, it's medicine to them," Oxendine said.

He was followed by three scientists from Duke University. Dr. Kevin LaBar explained the therapies that can result from understanding how the brain processes music.



Jazz singer Nnenna Freelon gave the closing performance.

PHOTOS: STEVE MCCAUF

"Music engages lots of different regions of the brain, and musical training can enhance those connections," he said. Dr. Heidi White described a pilot study using a patient's musical preferences in the treatment of dementia. "There was a statistically significant decrease in the severity of symptoms...language improvements, a greater volume of speech and more emphasis on reminiscence," she said. Dr. Neema Sharda directs the Confusion Avoidance Led by Music (CALM) project. "We hope to shrink the risk of delirium and use personalized music to modulate the need for pain medications," said Sharda. In one study, 65 percent of her patients reported a positive effect on mood and decreased delirium risk.

Musical performers included the Durham Medical Orchestra; the Croasdaile Chorale, composed of residents of the Croasdaile Retirement Village; and Kidznotes. Six-time Grammy-nominated jazz singer Nnenna Freelon closed the day with an interweaving of storytelling and song.

The event was a first for NIEHS. "Since I became director of NIEHS we've made a tradition of sponsoring community forums," said Birnbaum. "We're going to start making music a part of our journey towards health." According to Thomas, NIH plans to offer more opportunities to investigate music as a therapeutic intervention. "This event continues that conversation," Thomas said.—John Yewell



Before participating in balance and strength tests, youngsters played a fun game of body bingo at the "Function Junction" in the CC's Rehab Clinic. Every child who won at bingo received a whistle.

Chesler

CONTINUED FROM PAGE 1

located in space (known as proprioception); and difficulties with other tactile senses. They had even more difficulty with tasks such as walking or reaching out to grasp an item, if their eyes were blindfolded. Cognitively, they were normal. Standard diagnoses and explanations had been elusive.

In a recent lecture in NCCIH's Integrative Medicine Research Lecture Series, Dr. Alexander Chesler, a Stadtman investigator in the NCCIH intramural program, highlighted how he and some NIH colleagues cracked this mystery and in the process found out more about the molecular and neural underpinnings of touch and pain.

"We found that two bases [i.e., genetic components of DNA] out of the 3 billion or so in the human genome, when changed, can result in this dramatic phenotype," he said. A phenotype consists of a person's characteristics that come from the expression of genes.

NINDS senior investigator Dr. Carsten Bönnemann brought one of these young patients to the Clinical Center for evaluation. He introduced her to Chesler, because of the latter's research focus on mechanosensation (the ability to detect mechanical stimuli). A collaborative study resulted, with a second young patient coming to NIH and researchers and clinicians joining from the CC's rehabilitation medicine department and several other institutions in the U.S. and Canada.

Bönnemann identified mutations within a gene called *Piezo2* that produces a protein known to function in mechanosensation. The team performed genetic sequencing analysis in the patients, as well as sensory tests (such as different kinds of stimuli to the skin), a reaching-out task, functional brain imaging and *in vitro* and messenger RNA assays.

Explaining his role, Chesler told the Lipsett Amphitheater audience that mechanosensation is about activating biological detectors called "mechanically gated ion channels"—structures within the cellular membrane of sensory neurons that let ions move into or out of cells. Mechanical stimuli physically open these channels, which produces a small electrical current from ion movement. The brain interprets that current as touch or another mechanical sensation.



Chesler highlights how he and some NIH colleagues found out more about the molecular and neural underpinnings of touch and pain.

PHOTOS: CHIA-CHI CHARLIE CHANG

The *Piezo2* gene qualifies as this type of ion channel, Chesler thought. Could mutations in it interfere with the ability to open up and produce the current? He and his team tested this hypothesis in the laboratory using sensory cells taken from the two patients. When they poked the cells and measured the resulting electrical current, indeed there was a significant drop in the level of current.

Among the authors' other findings were that while the patients had difficulty feeling

certain kinds of mechanosensation, some types—such as pain, pressure, itch and temperature—were unaffected. Genetic testing of their family members (none of whom had these symptoms) showed that these *Piezo2* mutations were hereditary and recessive.

When the study was reported in the *New England Journal of Medicine* in 2016, the authors began to receive word of other cases. Since then, four additional patients have been evaluated at the CC, with more to come. Bönnemann continues to work with this population to determine ways to help treat their symptoms.

Chesler marveled at how great a detective the human sensory system is: "Given how much information our spinal cord and brain are bombarded with at any given moment, it's quite an amazing feat that we could have these specific sensations and tell them apart with specific detail," he said. "It's an amazing system."

He cautioned, however, that "there's much that we don't know." Chesler plans to continue dissecting the mechanosensory network, a line of research that has implications for better understanding of pain, a top NCCIH research priority area. Another benefit would be to inform future treatments and therapies for this rare genetic medical issue.

The full lecture is available at <https://videocast.nih.gov/Summary.asp?Live=27286&bhcp=1>. 

'SEMANTIC ANNOTATIONS'

Gennari To Speak in NLM Series, June 6

The next speaker in the NLM Informatics and Data Science Lecture Series will be Dr. John Gennari, who will discuss "Semantic Annotations, Reuse and Reproducibility" on Wednesday, June 6 from 2 to 3 p.m. in Natcher Conference Center, balcony A.

Gennari has been a professor in biomedical and health informatics at the University of Washington for more than 15 years. His doctorate is in computer science, but he began working in biomedical informatics in the early 1990s, beginning with work on the Protégé knowledge representation and ontology development system. He has had a wide range of experiences on large, multi-institutional, multi-disciplinary projects, which led to his research focus of knowledge reuse and knowledge sharing. His expertise is in ontology development, standards and semantic web tools.

Gennari is the graduate program director at UW, overseeing the Ph.D. and research M.S. programs. He is currently on the NLM biomedical informatics, library and data sciences review committee.

Sign language interpreters will be provided. Those who need reasonable accommodation to participate should contact Ebony Hughes, (301) 451-8038, Ebony.Hughes@nih.gov or the Federal Relay (1-800-877-8339).



Dr. John Gennari



Combining clopidogrel and aspirin after a small stroke decreases risk of a new stroke, heart attack or other ischemic event, international study finds.

IMAGE: SMARTSTOCK/ISTOCK

International Study Suggests Combination Therapy May Prevent Stroke in Certain People

Results from an international clinical trial of more than 4,880 participants, published in the *New England Journal of Medicine*, show that combining clopidogrel and aspirin following a small stroke or minor stroke symptoms decreases risk of a new stroke, heart attack or other ischemic event within 90 days. The combination therapy was also associated with an increase in major bleeding, although many of those episodes were non-fatal and did not occur in the brain. The study was supported by NINDS.

“These findings are likely to have a global effect on clinical practice, as these drugs are easily available in many hospitals and clinics,” said NINDS director Dr. Walter Koroshetz. “As the benefit of the combination was concentrated in the first 2 weeks while risk of bleeding was constant over 90 days, it may be especially valuable in acute management of a minor ischemic stroke or transient ischemic attack [TIA].”

The Platelet-Oriented Inhibition in New TIA and minor ischemic stroke (POINT) clinical trial follows an earlier study, which showed benefits of this drug combination in a Chinese population. POINT was conducted to see whether the benefits could be expanded to a more diverse group of patients.

The study, led by Dr. S. Claiborne Johnston of Dell Medical School at the University of Texas at Austin, included patients who had experienced either a minor stroke or a TIA,

in which blood supply to a part of the brain is briefly stopped and can be a risk factor for a larger stroke. Study participants were given clopidogrel and aspirin or aspirin alone to see whether the combination therapy could prevent a larger stroke within 3 months.

Johnston’s team found that the combination of clopidogrel and aspirin prevented more ischemic events, such as stroke and heart attack, compared to aspirin alone. The results showed that 5 percent of patients in the combination therapy group and 6.5 percent of patients taking only aspirin experienced such an event within 90 days.

However, the combination therapy was associated with a greater risk of major bleeding, or hemorrhage, than aspirin alone.

“We saw a real benefit with the combination therapy, but that treatment does come with a risk,” said Johnston. “Overall, the risk of severe bleeding was very small, but it was not zero.”

The study was stopped early because the combination therapy was found to be more effective than aspirin alone in preventing severe strokes but also due to the risk of severe hemorrhage.

Scientists Find Potential New Approach to Stop Cancer Metastasis

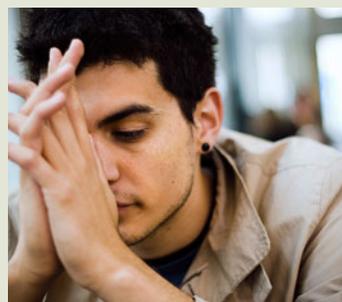
Researchers have identified a compound that blocks the spread of pancreatic and other cancers in various animal models. When cancer spreads from one part of the body to another in a process called metastasis, it can eventually grow beyond the reach of effective therapies. Now, there is a new plan of attack against this deadly process, thanks to scientists at NIH, Northwestern University and their research partners.

The team collaborated to identify a compound, which they named metarrestin, that stopped tumor metastasis in multiple animal models. Mice treated with metarrestin also had fewer tumors and lived longer than mice that did not receive treatment. Results were published May 16 in *Science Translational Medicine*.

“Many drugs are aimed at stopping cancer growth and killing

cancer cells,” said co-author Dr. Juan Marugan, group leader of the NCATS Chemical Genomics Center. “However, there is no single approved drug specifically aimed at treating metastasis. Our results show metarrestin is a very promising agent that we should continue to investigate against metastasis.”

In patients, metarrestin potentially could be effective as a therapy after cancer surgery. Because advanced cancers are difficult to completely remove with surgery, doctors typically give chemotherapy to try to kill undetected cancer cells left behind and prevent the cancer from coming back. Metarrestin could be added to such standard drug therapy.



Among couples being treated for infertility, depression in the male partner was linked to lower pregnancy chances, according to an NIH-funded study.

IMAGE: THEPRINT/THINKSTOCK

Male Depression May Lower Pregnancy Chances

Among couples being treated for infertility, depression in the male partner was linked to lower pregnancy chances, while depression in the female partner was not found to influence the rate of live birth, according to a study funded by NIH.

The study, which appears in *Fertility and Sterility*, also linked a class of antidepressants known as non-selective serotonin reuptake inhibitors (non-SSRIs) to a higher risk of early pregnancy loss among females being treated for infertility. SSRIs, another class of antidepressants, were not linked to pregnancy loss. Neither depression in the female partner nor use of any other class of antidepressant were linked to lower pregnancy rates.

“Our study provides infertility patients and their physicians with new information to consider when making treatment decisions,” said study author Dr. Esther Eisenberg of NICHD, which funded the study.

Citing previous studies, the authors noted that 41 percent of women seeking fertility treatments have symptoms of depression. In addition, a study of men seeking IVF treatments found that nearly 50 percent experienced depression. The authors conducted the current study to evaluate the potential influence of depression in couples seeking non-IVF treatments.

Scientists Watch Brain’s Lining Heal After Injury

Following head injury, the protective lining that surrounds the brain may get a little help from its friends: immune cells that spring into action to assist with repairs. In a new study, NIH scientists watched in real time as different immune cells took on carefully timed jobs to fix the damaged lining of the brain, also known as meninges, in mice. These results may help provide clues to the discovery that the meninges in humans may heal following mild traumatic brain injury (mTBI) and why additional hits to the head can be so devastating.

“The lining of the brain, with help from the immune system, has a remarkable ability to put itself back together again after injury,” said Dr. Dorian McGavern, NINDS scientist and senior author of the study published in *Nature Immunology*. “As we learn more about all the cells involved in the repair process, we may be able to identify potential targets for therapy that lead to better outcomes for patients.”

The study came about from an observation on MRI scans of adult patients who experienced a concussion or mTBI. Around half of patients with mTBI show evidence of injury to blood vessels in the meninges, which appears on MRI scans as a vascular dye leaking out of the damaged vessels.

The meninges are a collection of membranes that line the central nervous system and help protect brain and spinal cord tissue from various forms of injury. Damage to the meninges can cause cell death in underlying brain tissue.



Dr. Richard Nakamura

CSR Director Nakamura Retires

BY DON LUCKETT

“One of the great joys of my 39+ year career at NIH has been working with so many extramural scientists and staff who care deeply about the future of science and NIH research,” said Dr. Richard Nakamura, who retired as director of the Center for Scientific Review on Apr. 30. “Their service has made NIH a great powerhouse for science and health.”

“I had planned on retiring a year after the NIH director asked me to re-stabilize the situation within scientific review in 2011,” he continued. “But instead, I became engaged with the great people at CSR and the important work that needed to be done.”

There was indeed a lot of work. NIH director Dr. Francis Collins praised Nakamura for helping CSR face multiple challenges: “During his tenure, Richard dealt with an historic increase in applications, multiple policy changes and a host of other challenges, including the recovery from the 2013 government shutdown,” he said.

“Richard demonstrated extraordinary leadership abilities, guiding the center forward while earning historically high approval ratings from his staff,” Collins continued. “He implemented improved and more efficient review procedures; advanced studies of NIH peer review including the possible impact of an investigator’s race in review scores; created new venues for employee input; and increased training and diversity of the center’s leadership.”

“I figured there wasn’t a better time to step back and let others lead,” said Nakamura. “I am thus very thankful that Dr. Noni Byrnes agreed to step in as acting CSR director to lead CSR forward until a new director can be named.” Byrnes recently was CSR’s acting deputy director and director of its Division of Basic and Integrative Biological Sciences.

“CSR and NIH peer review still face significant challenges,” Nakamura continued. “The numbers of incoming applications keep going up while paylines remain at historic lows, new policies continue to emerge and the need to assess and advance the quality of NIH reviews remains a pressing one. Fortunately, CSR is a strong organization with a highly qualified staff that’s deeply dedicated to peer review.”

Nakamura came to CSR after a 32-year tenure at the National Institute of Mental Health, where he had

served as both scientific director and deputy director as well as acting director from 2001 to 2002. For his extraordinary efforts, he earned the Presidential Rank Award and other leadership awards.

Collins also praised him as “a staunch defender of the quality of NIH-supported research...For example, when NIMH’s basic research funding was questioned by Congress and the media in 1995, Richard coordinated a robust defense that led Sam Donaldson of ABC News’ *Prime Time Live* to say he thought he was investigating ‘the motherlode of government waste’ but he found NIMH studies were ‘a bargain at twice the price.’”

While Nakamura will now enjoy extended travels and more time with his wife and grandchildren, “he isn’t retiring from his passions that drove his efforts at NIH,” said Collins. “He plans to volunteer at CSR to ensure some of the studies he started will be finished.”

Nakamura also is excited to be free from the fetters of federal employment—he wants to be a vocal advocate for mental health. No one knows what he might say, but it should be interesting given that he has been called one of the most thoughtful leaders among the NIH institute and center directors.

Retiree Mishoe Honored with Namesake Fellowship

BY LIZ MUSTIN DAVIS

“The next generation will be the ones to change the world, and I am so excited to be a part of it,” said Dr. Helena Mishoe, describing her feelings about the newly unveiled Radm. Helena O. Mishoe Fellowship for Underrepresented Scientists at the National Heart, Lung, and Blood Institute.

Mishoe, who spent most of her NIH career at NHLBI, retired last December. Known for her dedication to improving health equity among underserved populations, her contributions have improved the lives of people across the globe.

The Mishoe fellowship—which offers opportunities for postbacs from nationally underrepresented backgrounds to receive training in basic, translational and clinical research—is a tribute to everything that Mishoe accomplished at NIH.

For a young Mishoe, the path to NIH was not clear-cut.

She grew up in rural Delaware, where she attended segregated schools until her junior year in high school. Despite the circumstances, her parents instilled in her and her siblings

the importance of education and hard work. This foundation drove Mishoe to earn several academic degrees while fueling her commitment to help others pursue an education as well.

Mishoe came to NIH in 1981 as an intramural staff fellow after receiving her Ph.D. in microbiology from Georgetown University School of Medicine. She rose through the research ranks early in her career, conducting independent work on molecular biology and gene expression while mentoring and training junior and senior research staff.

In 1988, she joined the extramural program at NHLBI. There, she began as a program director, providing direction for research programs meant to improve the lives of patients with blood diseases and disorders.

Shortly after arriving at NHLBI, she met and shadowed Dr. Ruth Kirschstein, who reiterated the importance of being a champion for others.

“Her passion and commitment to public service, NIH, her staff and those marginalized due to gender, socio-economic status and race and ethnicity inequities forever changed my life,” said Mishoe. “She took me under her wing and became my role model, mentor, confidante and friend.”

In 1990, Mishoe joined the Commissioned Corps. Her duties as an officer gave her a depth of knowledge of other scientific disciplines and a broad network of individuals she could call on to help solve public health problems over the years.

Mishoe was eventually appointed by the NIH director to serve as NIH representative to the surgeon general’s policy advisory council for a decade.

She returned to school for her master’s in public health in 2001. Upon graduation, she was appointed associate director, overseeing a new office with a dual mission to facilitate and coordinate the NHLBI minority health research and research training activities, as well as overall training and career development.

She spent the rest of her career at NHLBI serving as a senior science executive.

“All the wonderful things that were accomplished during my tenure for established researchers, fellows and trainees simply would not have been possible without my committed and amazing staff who worked with me tirelessly over the years,” she said.

Mishoe received numerous awards, including the Surgeon General’s Exemplary Service Medal and the NIH Ruth Kirschstein Mentoring Award. She says the renaming in her honor of the Biomedical Research Training Program for Underrepresented Groups—which she served as program director and career mentor—is her most meaningful recognition.

“All of the work that I’ve done and want to continue to do is about valuing people and making sure that they not only have opportunities, but are also prepared for those opportunities,” she concluded.



Radm. Helena Mishoe

NINR's Saligan Participates in Wreath-Laying

Dr. Leorey Saligan (r), chief of the symptom biology unit in NINR's Division of Intramural Research and captain in the Public Health Service, participated in the Military Health System Nurses Week wreath-laying ceremony at Arlington National Cemetery's nurses' memorial on May 7. He was representing Radm. Susan Orsega, chief nurse officer of the PHS. Also participating in the wreath-laying were Col. Melissa J. Hoffman, deputy chief, Army Nurse Corps; Maj. Gen. Dorothy Hogg, deputy surgeon general and chief, Air Force Nurse Corps; Dr. Carol Romano, rear admiral (ret.), dean, Daniel K. Inouye Graduate School of Nursing at the Uniformed Services University of the Health Sciences; and Capt. Deborah Roy, deputy director, Navy Nurse Corps.

PHOTO: DEFENSE HEALTH AGENCY COMMUNICATIONS DIVISION



NHLBI's Wiestner Wins Scholar-Innovator Award

Dr. Adrian Wiestner, senior investigator in NHLBI's Laboratory of Lymphoid Malignancies, is among winners of the 2018 Harrington Scholar-Innovator Awards. The awards support breakthrough discoveries in diverse research areas including cancer, diabetes, osteoporosis and addiction.

Wiestner is an internationally recognized expert in chronic lymphocytic leukemia, a type of cancer of the blood and bone marrow. His research team has developed experimental monoclonal antibodies that can be combined with an existing FDA-approved therapeutic antibody to deliver a "one-two punch" against cancer cells, including those that can escape killing by conventional monoclonal antibodies. His research is currently being explored in preclinical models with the hope of eventually moving the studies to human trials at the Clinical Center.

The scholar-innovator awards advance drug discoveries by providing access to financial support and critical expertise in accessing drug development resources. They are administered by the Harrington Discovery Institute at University Hospitals in Cleveland.



CELEBRATING 'EARTH MONTH'

NIH PHS Officers Volunteer at Local Parks

April marked Earth Month to raise awareness of the health of our environment. Earth Day recognition began in 1968 when Morton Hilbert and the Public Health Service organized the Human Ecology Symposium, an environmental conference for students to hear from scientists about the effects of environmental degradation on human health. For the next 2 years, Hilbert and students worked to plan the first Earth Day. In April 1970—along with a federal proclamation from Sen. Gaylord Nelson—the first Earth Day was held.

Now the planet is celebrated throughout the entire month of April. Cleanup events were organized and volunteers were recruited to help clean public land, recreation parks and watersheds. Volunteers removed tires, plastic bottles, cans and other debris from local waterways.



Helping to clean up a park in celebration of Earth Month are (from l) Chris Light, Lt. Heather Light, Lt. Santhana Webb, David Webb (NIH staff), Lt. Theresa Yu, Samantha Yu.

PHOTO: RANGER STEVE DEAN

Lt. Santhana Webb and Lt. Theresa Yu of NIH's PHS communications/visibility subcommittee led groups of officers, civilians and their families to help clean local parks in Virginia and Maryland. The group was part of more than 600 volunteers who gave 1,500 hours of service to collect an estimated 5.1 tons of trash across 8 parks in Fairfax County, Va.

Events increased PHS visibility and encouraged active living and good health.

Healthy Volunteers Needed

NIAID researchers seek healthy volunteers, 18-50 years old, for an investigational vaccine study targeting respiratory syncytial virus (RSV). Compensation is provided. For more information, call 1-866-833-5433 (TTY 1-866-411-1010). Email vaccines@nih.gov or visit <http://bit.ly/2nOkOvY>.

RSV Challenge Study Needs Healthy Volunteers

NIAID researchers are seeking healthy volunteers ages 18-50 to participate in a respiratory syncytial virus (RSV) challenge study at the Clinical Center. Participants will receive one dose of the RSV virus. Afterward they will be required to stay in the hospital from 9 to 16 days or more and return for follow-up visits about 1 and 2 months after infection. They may develop mild or medium cold symptoms. Researchers will use what they learn to test new antivirals to treat and vaccines to prevent RSV in the future. Compensation is provided. For more information, call 1-866-444-2214 (TTY 1-866-411-1010) or visit online at <https://go.usa.gov/xnpZD>.

Brain Injury in Youth?

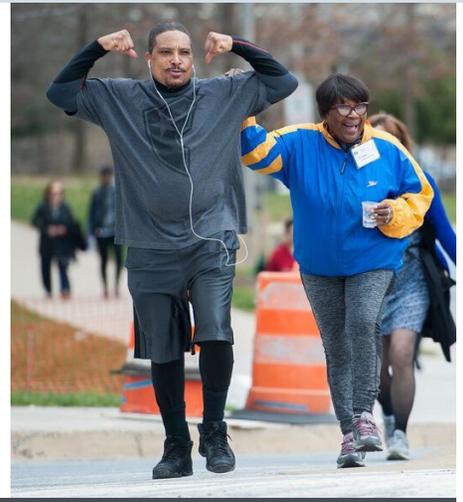
Researchers at the Clinical Center seek study participants age 5 and older who have experienced a brain injury before the age of 13 that affects arm and leg movements. Cerebral palsy is an example of this type of brain injury. Researchers are investigating how the brain controls movement so we can design better treatments. Compensation is provided. For more information, call the Office of Patient Recruitment at 1-866-444-2214 (TTY 1-866-411-1010). Read more at <https://go.usa.gov/xnTmS>. Refer to study 13-CC-0110.

NIAID Recruits Healthy Volunteers

NIAID researchers seek healthy volunteers, 18-60 years old, for a study at the Clinical Center to examine safety and tolerability of an investigational product targeting Ebola. You cannot get Ebola from this product. Financial compensation is provided. For more information, call 1-866-444-2214 (TTY 1-866-411-1010). Read more at <https://clinicaltrials.gov/ct2/show/NCT03478891>.

People with Anxiety Sought

NIMH is studying people with anxiety and how they respond to stressful events. Researchers are seeking those with general anxiety, panic and/or social anxiety disorder. Study requires 1 to 2 outpatient visits to the Clinical Center. Compensation will be provided. For more information, call 1-866-444-2214 (TTY 1-866-411-1010) and refer to study 03-M-0093.



At left, participants in the 5K warm up before stepping off. At center, NIMHD director Dr. Eliseo Pérez-Stable revs up the crowd; at right, “Superman” strikes a victorious pose during the event.

2nd National Minority Health Month 5K in the Books

On a cloudy, brisk day in April, NIH staff, contractors and friends gathered on the lawn in front of Bldg. 1 to participate in the 2nd Minority Health 5K Walk/Run.

Hosted by the National Institute on Minority Health and Health Disparities, along with the NIH Office of Research Services and the Recreation and Welfare Association’s Fitness and Well-Being Program, the event was part of 2018 National Minority Health Month activities. The month is a time to raise awareness of health disparities and health equity topics in America.

With nearly 400 registered participants, the 5K began promptly at 11:30 a.m. with brief remarks from NIMHD director Dr. Eliseo Pérez-Stable.

A self-proclaimed former couch potato, Pérez-Stable encouraged everyone to be active while explaining the goals of the 5K.

“We are here today not only to walk or run,” he said, “but to help us continue to make progress towards health equity.”

This year, for the first time, five NIH institutes and centers supported the event by sponsoring water stations.



Pedestrians crossing, indeed. Enthusiastic staffers cheer on the walkers and runners on the lawn in front of Bldg. 1. Motivational signs and IC-sponsored water stations along the route around campus also kept participants encouraged.

PHOTOS: RENO HOLLOWAY

Their cheers, encouragement and motivational signs helped the runners and walkers get to the finish line.

After the race, there was a food truck and a variety of desserts available for purchase. Another first for 2018 was a satellite walk around the Rockledge Bldg., sponsored by NICHD’s Worklife Enrichment.

Watch the 2018 Minority Health 5K video to see all the action on the NIMHD YouTube channel at <https://www.youtube.com/watch?v=CqTTK11kcQO>.—
Shelly Pollard



Supporting cast. Above, “athletes” Brian Boykins and Holly Beckerman Jaffe, both of the NIH Ethics Office, lend their legs to support the run/walk. Likewise below, NIH Exec Sec staffers (from l) Shannon Wooldridge, Michelle Whitfield, Emma Di Mantova and Lisa Hurlbaeus Marshall make it 2 years in a row.



New this year for Minority Health Month, a satellite walk (& roll!) gets underway around the Rockledge Bldg.